

Notice of Allowability

Application No.

09/849,799

Examiner

Tonia L. Meonske

Applicant(s)

HENRY ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed 9/26/06.
2. ☒ The allowed claim(s) is/are 1-30, 34-39 and 45-77.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 8/29/06 & 7/14/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Fritz Fleming
FRITZ FLEMING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

11/7/2006

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 26, 2006 has been entered.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this examiner's amendment was given in a telephone interview with E. Alan Davis on October 31, 2006.

a. In claim 45, line 12, claim 51, lines 18, 20, 24 and 26, claim 61, lines 17, 21, 31, 32, 37 and 38, claim 74, lines 12 and 13, the limitation "if" has been changed to "when".

Allowable Subject Matter

4. Claims 1-30, 34-39, and 45-77 are allowed.

5. The following is an examiner's statement of reasons for allowance:

- a. Referring to claim 1, the prior art of record has not taught or suggested “providing first and second taken target address predictions of a branch instruction... said first prediction selecting a first line of the instruction cache ... based on the branch instruction type ... said second prediction selecting a second line of the instruction cache” in combination with the claimed first and second branch predictors, instruction decode logic and branch control logic.
- b. Referring to claim 28, the prior art of record has not taught or suggested “wherein said control logic selectively overrides, based on said type of said branch instruction and said comparison, said first prediction with said second prediction” in combination with the claimed first and second branch predictors, comparison logic, instruction decode logic and control logic.
- c. Referring to claim 36, the prior art of record has not taught or suggested “branching the processor based on said speculative taken target address prediction ... wherein said control logic subsequently selectively branches the processor based on said non-speculative target address prediction and said branch instruction type” in combination with the claimed speculative branch predictor, control logic, instruction decode logic, and non-speculative branch predictor.
- d. Referring to claim 45, the prior art of record has not taught or suggested “branching the processor to said speculative target address ... selectively branching, based on said branch type, to said non-speculative target address, when said speculative and non-speculative target address predictions do not

match” in combination with the claimed generating, decoding, generating and determining steps.

e. Referring to claim 51, the prior art of record has not taught or suggested “overriding said branching to the first target address prediction by branching instruction fetching to the second target address prediction, when the first target address prediction does not match the second target address prediction, and when the type of the branch instruction is a first of the plurality of predetermined types” in combination with the claimed fetching, generating, branching, determining and foregoing steps.

f. Referring to claim 61, the prior art of record has not taught or suggested “override the first branch predictor by fetching a third cache line from the instruction cache at the second target address prediction, when the first target address, prediction does not match the second target address prediction, and when the type of the branch instruction is the second of the plurality of predetermined types.” in combination with the claimed instruction fetch logic, a first branch predictor, instruction decode logic, a second branch predictor, a third branch predictor and comparison logic.

g. Referring to claim 74, the prior art of record has not taught or suggested “wherein said processor branches to said speculative target address prediction, wherein the processor subsequently branches to said non-speculative target address predictions when said speculative and non-speculative target address predictions miscompare and when said instruction is a type comprised in a first

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set of instruction types" in combination with the claimed branch target address cache, target address calculator and comparator.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L. Meonske whose telephone number is (571) 272-4170. The examiner can normally be reached on Monday-Friday with first Friday's off.
8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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